



CCTS SPECIAL MODULES

Learn more at www.uab.edu/ccts/special-modules

DRIVING INNOVATION

The CCTS Special Modules domain comprises three distinct research areas with tremendous promise: genomic medicine, drug discovery, and device development. Our goal with all three is the same: to help clinical and translational investigators connect with and leverage the state-of-the-art expertise and unique capacities found within the CCTS Partner Network in each area.

By connecting researchers with our Special Modules resources, the CCTS seeks to accelerate the pace of scientific discovery and the translation of findings into improvements in clinical practice and human health. We invite you to learn more about our Genomic & Precision Medicine Module and the Academic Drug Discovery and Device Development (AD4) program. The latter represents an expansion and synthesis of our previous efforts in this space with the Alabama Drug Discovery Alliance and AIMTech.

GENOMIC & PRECISION MEDICINE

The sequencing of the human genome has created an unprecedented opportunity to apply new knowledge and technology to improve human health. The goal of the CCTS Genomic & Precision Medicine Special Module is to connect clinical and translational researchers to expertise and capacity to undertake genetic and genomic investigation. In this way, the Network will accelerate discoveries in genomics and genomic medicine and will propel those discoveries into clinical application.

Building on the state-of-the-art technologic capacities and expertise at the Hub, HudsonAlpha Institute for Biotechnology (HudsonAlpha), and other CCTS Partners, the Genomic & Precision Medicine Module catalyzes rigorous genomic research and innovation through consultation with CCTS investigators in the design and implementation of studies, including advice regarding scientific strategy, appropriate use of technologies as well as data analysis. These experts also spearhead cutting-edge assay development, including single cell genomics and advanced next-generation sequencing of nucleic acid species (e.g., miRNA), techniques that are made available to investigators throughout the Partner Network.

The Genomic & Precision Medicine Module also supports collaborative research initiatives like the Alabama Genome Health Initiative (AGHI) and the Undiagnosed Diseases Program (UDP).

DRUG DISCOVERY & DEVICE DEVELOPMENT

The CCTS Hub works with regional partners to facilitate and promote unique research opportunities. Through the AD4, CCTS investigators can access the leading-edge, high-throughput screening and drug development capacity at Southern Research to assay new molecular targets, develop effective screens for novel targets, accelerate potential therapies through the development pipeline, and find new applications for existing clinically tested drugs (“re-purposing”).

Both drug and device programs are supported by multidisciplinary project development teams that provide expertise tailored to the study aims, including medicinal chemistry, high-throughput assay development, engineering, clinical application, and commercialization.

MAKING A DIFFERENCE

- Fifty-seven of the 160 patients evaluated by our Undiagnosed Diseases Program have been successfully diagnosed.
- Discovery of genomic-based screening methodology for colorectal adenomas.
- CCTS Partner Network engaged to support major, collaborative initiatives in genomic medicine, including Southern All of US, AGHI and South-Seq.
- Success in therapeutically impacted drug repurposing.
- 15 investigator-initiated drug discovery projects in active development.

